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Rec'd ED 3/19/59 9:00 Warren

March 13, 1959

[redacted]

ILLEGIB

TO #HH, FEB 1959

Dear Sir:

This is the first letter report under Task Order No. HH and it summarizes the activity from February 4 to March 4, 1959.

The objective of this program is to conduct research directed toward the design and development of an experimental cutting device that could be used to [redacted] 25X1 Since this device should be independent of an outside power supply, it would probably be hand or battery operated. For the purpose of analysis, the problems associated with the design and development of such a device have been divided into three groups: (1) cutting tools, (2) operating devices, and (3) methods of attachment and adjustment of the unit [redacted]. 25X1

During this research period, a preliminary investigation was made on the cutting action of rotary cutting tools in a hand-operated drilling unit and with a 6-volt-battery-operated motor. The no-load speed of the hand-operated unit was approximately 350 rpm and of the drilling motor, 3,000 rpm. A cutting tool which could be used to work [redacted] would probably be less than 3/32-in. diameter and approximately 1-1/2 inches long. In view of the size limitation, the following cutting tools were investigated: midget burs, files, mounted wheels, drill bits, and spiral-saw blades. The cutting action of the midget burs and coarse-file 25X1

sections was good, but these tools were relatively fragile and cut with some associated noise. The mounted wheels had an extremely short life, and a relatively slow cutting action; therefore, they were not considered to be feasible for this job. The drill bits also were unsatisfactory when used with either of the above-indicated "power" sources. The fastest and quietest cutting tool was a section of spiral-saw blade. However, hand filing with a spiral-saw blade appeared to remove material nearly as rapidly as did the use of the blade with the battery-operated motor.

Further, this study of some cutting devices and typical [redacted] indicated that, contrary to our previous thinking, an attachment to maintain a fixed relation between [redacted] the cutting device probably would not be required in order to facilitate the operation of the proposed device. 25X1 25X1

During the next month, a study will be made of the cutting action and cutting rate of rotary-type and reciprocating-type cutting tools. The investigation of battery-powered devices also will be continued.

The original appropriation on this task order was $5,305. As of March 1, 1959, the unexpended balance was approximately $4,600.

Sincerely,

[redacted] 25X1

ABW:mlm

In Duplicate